FINAL
FORMER MARINE CORPS AIR STATION (MCAS) EL TORO
Base Realignment and Closure (BRAC) Cleanup Team (BCT)
1 August 2018 Meeting Summary

Meeting Location: Wood Irvine Office
Meeting Date/Time: 1 August 2018/1500–1715
Summary Prepared by: Gabriela Staehle, Multi-Media Environmental Compliance Group (MMEC Group)

Meeting Attendees:

Navy:	Agencies:	Others:
Marc P. Smits	Jennifer Rich, California Environmental Protection Agency, Department of Toxic Substances Control (DTSC)	Tony Guiang*, MMEC Group
Guy Chammas		Katy Robinson, MMEC Group
Rich Pribyl		Gabbi Staehle, MMEC Group
Alex Bollweg*		Bob Chapman*, MMEC Group
Kristyn Drake*	Patricia Hannon, California Regional Water Quality Control Board, Santa Ana Region (RWQCB)	
	Mary Aycock*, United States Environmental Protection Agency (USEPA)	

***Attended via teleconference**

Attachments:

Attachment 1 – Former Marine Corps Air Station El Toro BCT Meeting Agenda, 1 August 2018

Attachment 2 – Document Status Update/Schedule

Attachment 3 – Former MCAS El Toro Environmental Status, 1 August 2018

Attachment 4 – Time-Critical Removal Action (TCRA) Update, Installation Restoration Program (IRP) Site 1 Adjacent Property, Former Marine Corps Air Station El Toro, Irvine, California

ACTION ITEMS

- The Navy will complete updates to the schedule and provide it to the Agencies for review along with a summary of the changes.
- Mr. Smits will work on responding to the radiological question regarding the Finding of Suitability to Transfer (FOST) #8 for Ms. Rich.
- The Navy will respond to DTSC comments for the IRP Site 1 Feasibility Study (FS).
- The Navy will respond to DTSC comments on the IRP Site 1 Memorandum of Understanding (MOU).

- For Exhibit B to the IRP Site 5 Covenant to Restrict Use of Property (CRUP), the Navy will show the proposed location of the perimeter fence with a note stating that the fence is not yet installed.
- The Navy and Agencies will reconvene during the next monthly BCT call on 29 August 2018.
- The Navy will consider holding an additional Restoration Advisory Board (RAB) meeting in November or December 2018.
- Ms. Rich will speak with Ms. Drake to determine how to update the landfill operation and maintenance (O&M)/long-term monitoring (LTM) plans to document the reinstitution of quarterly landfill gas (LFG) monitoring for 1 year.

INTRODUCTIONS AND AGENDA REVIEW

Marc Smits, Navy BRAC Environmental Coordinator (BEC), welcomed everyone to the BCT meeting. Twelve people attended the meeting, including five people who attended via teleconference. Mr. Smits reviewed the BCT Meeting Agenda (Attachment 1) and introduced the IRP Site 1 TCRA as the key topic for the meeting.

Agenda Item 1. Document Status Update/Schedule (Attachment 2):

Mr. Chammas, Navy Lead Remedial Project Manager, reviewed the Document Status Matrix, which is included as Attachment 2.

First Priority: IRP Site 1 Adjacent Property TCRA

Mr. Chammas indicated that documents related to the IRP Site 1 Adjacent Property TCRA are the Navy's highest priority. Mr. Pribyl added that the Independent Third-Party Quality Assurance Project Plan (QAPP) is currently the most pressing. He indicated that Mr. Roman Racca (DTSC) will review the QAPP, but neither RWQCB nor USEPA would necessarily need to review the document.

Mr. Pribyl stated that the Navy recently completed incremental sampling methodology (ISM) soil sampling for munitions constituents (MC) and will be releasing a final summary of the results in the near future. There are no recommendations in the summary because no MC detections of concern were reported.

Mr. Pribyl stated that the Draft Final IRP Site 1 Adjacent Property TCRA Work Plan (Draft Final WP) will be submitted on 10 August 2018. He thanked the Agencies for allowing the Navy to begin fieldwork under the Draft Final WP. Ms. Rich asked for clarification on the Agencies' concurrence to conduct fieldwork under the Draft Final WP, and Mr. Pribyl clarified that the Navy had written concurrence from the Agencies to conduct MC soil sampling in accordance with the Draft Final Sampling and Analysis Plan (SAP). The Navy would like to get similar concurrence on the Draft Final WP. The additional comments that will be incorporated in the final versions will not affect the quality of the work.

Ms. Rich requested that the Navy provide a summary of sections of the Draft Final WP that did not have comments/changes. Mr. Pribyl highlighted that there were no comments on the geophysical survey, Standard Operating Procedures (SOPs), or site restoration plan. He clarified that there was no concurrence yet on the entire Draft Final WP. Ms. Rich suggested that a note be added to state which sections had no comments and therefore would not be modified. She also explained that it was her understanding that the Navy would still incorporate the changes in the final version, even though the Navy is already beginning fieldwork with preliminary concurrence.

Mr. Pribyl agreed to send a summary to Ms. Rich of sections of the Draft Final WP that did not have comments/changes. Mr. Pribyl also agreed that the Navy would update the Final WP to include comments, even though the Navy is already beginning fieldwork with preliminary concurrence.

Other Priorities

Mr. Chammas indicated that the second priority is the IRP Site 5 CRUP. The Navy has received Ms. Rich's comments and is awaiting comments from Ms. Hannon.

Mr. Chammas indicated that the third priority is the Draft Final IRP Site 16 Deep Vadose Zone Remedial Action Completion Report (RACR). DTSC has provided most of the comments and the Navy will begin to prepare responses to comments (RTCs).

The fourth priority is the Draft Technical Memorandum for IRP Site 3 Waste Area C1. Ms. Rich explained that Mr. Greg Shaffer (DTSC) was preparing the Land Use Covenant (LUC) for IRP Site 3, Waste Area C1.

Mr. Chammas stated that only the RWQCB was reviewing Addendum 1 to the Draft Site Closure Report for Groundwater, Underground Storage Tank (UST) Site 398.

For IRP Sites 1 and 2 groundwater, Mr. Chammas explained that a Substrate Injection Work Plan will be issued about October 2018 to cover fieldwork planned for January 2019. The additional substrate injections would occur two months prior to the next annual performance monitoring round.

Mr. Chammas stated that at IRP Site 16, the trichloroethene (TCE) concentrations in the wells adjacent to the western boundary of the area requiring institutional controls (ARIC) were less than the remediation goal (RG) of 5 micrograms per liter (µg/L) during the latest monitoring round (June 2018).

Schedule

Mr. Chammas suggested a new procedure for agency review and concurrence of the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) schedule. Either the Navy will send a draft schedule to the Agencies for review a few weeks before the BCT meeting and will attempt to receive concurrence during the BCT meeting, or the Navy will provide the draft schedule to the Agencies during the BCT meeting and the Agencies will have a few weeks to review and concur thereafter.

Regarding the current schedule, Mr. Chammas stated that the Navy will make a few more updates and then will send the schedule to the Agencies. The schedule will be accompanied by a summary of major changes. Mr. Chammas explained that for the current BCT meeting, the Document Status Matrix would be relied upon instead.

Agenda Item 2. Environmental Status Update (Attachment 3):

Mr. Chammas began reviewing the Environmental Status Update, which is included as Attachment 3.

Finding of Suitability to Transfer (FOST) #8

Mr. Chammas stated that FOST #8 has been completed, but the Navy is still in the process of transferring one of the three Carve-Outs (CO II-H). The transfer of CO II-H was delayed because the Navy had identified the potential of per- and polyfluoroalkyl substances (PFAS) impacts to underlying groundwater. In July 2017, groundwater sampling was conducted at IRP Site 5, and the results indicated that

perfluorooctanoic acid (PFOA) and perfluorooctane sulfonate (PFOS) concentrations were below the USEPA lifetime health advisory (LHA) and perfluorobutanesulfonic acid (PFBS) concentrations were below the USEPA regional screening level (RSL) for tap water. Therefore, CO II-H is suitable for transfer. Mr. Chammas stated that Ms. Rich has provided comments on the CRUP and the Final CRUP and quitclaim deed will be completed by 30 September 2018. Ms. Hannon responded that she had not yet reviewed the CRUP. Mr. Smits asked that Ms. Hannon provide comments to the Navy as soon as possible.

Ms. Rich asked Mr. Smits if he was still looking into her radiological question regarding IRP Site 5. Mr. Smits responded that he was.

FOST #9

Mr. Chammas briefly discussed the status of FOST #9, which addressed the property on which former Tank Farm 555 was located. The five USTs at former Tank Farm 555 were filled with cellular concrete, and the Navy received closure concurrence from RWQCB and Orange County Health Care Agency (OCHCA). The property was transferred to Heritage Fields and subsequently to Heritage Hills.

FOST #10

Mr. Chammas stated that he would be leading the FOST #10 effort and the document will address the final four COs remaining (II-D-2, II-F-2, II-V-2, and III-B-3), making it the last FOST for Former MCAS El Toro. In order to meet the property transfer goal of September 2019, Mr. Chammas asked the Agencies if they thought FOST #10 could go straight from draft to final as long as the draft was of high quality and the major edits made in response to Agency comments on the draft were well documented and clearly shown in redline/strikeout in a preliminary final version. The Agencies agreed on the approach since it had worked so well for the previous two FOSTs.

Mr. Smits added that during the RAB meeting he will present a slide that shows the last four COs that have yet to be transferred. Mr. Smits stated that he wants to highlight the progress that has been made for property transfer with over 95% of the property having been transferred to date.

Basewide Assessment of PFAS in Groundwater

Mr. Chammas stated that in July 2017, the Navy conducted groundwater sampling at 7 IRP sites where previous military activities may have potentially released PFAS. The results indicated that IRP Sites 1, 18, and 24 had PFOA, PFOS, and/or PFOA+PFOS concentrations that exceeded the USEPA LHA. There were no PFBS detections above the RSL for tap water.

In August 2016, Irvine Ranch Water District (IRWD) conducted PFAS sampling of the closest drinking water production well to Former MCAS El Toro (b) (9) [redacted]. Results were non-detect. Mr. Chammas stated that the Navy had met with IRWD and Orange County Water District (OCWD) in March 2018 and was meeting with these agencies again on 7 August 2018 to discuss PFAS detections in the general vicinity of Former MCAS El Toro. While there is no current regulatory driver to treat PFAS in effluent from groundwater extracted from the IRP Site 24 Shallow Groundwater Unit (SGU) or IRP Site 18 Principal Aquifer (PA), the Navy, IRWD, and OCWD want to be forward-thinking about possible treatment system upgrades that may be necessary in the future.

Mr. Chammas stated that no additional PFAS investigations are scheduled for Former MCAS El Toro, with the exception of the planned sampling of monitoring wells 18BGMW19 and 18BGMP06 in September 2018. Both of these wells are located between known PFAS detections associated with

upgradient IRP Site 24 and downgradient drinking water production well (b) (9) . The need for additional investigations may be reassessed as PFAS regulations change.

Mr. Smits added that no PFAS have been detected in groundwater extracted for drinking water, which is the main concern. He explained that IRWD and OCWD have sampled the nearby production wells, with no PFOA, PFOS, and/or PFOA+PFOS concentrations greater than the USEPA LHA. He stated that because of relatively high total dissolved solids and nitrate concentrations in the SGU, it was not used for drinking water. However, the PA is used as a drinking water source.

Hangar 296

Mr. Chammas stated that the Navy has consulted with DTSC and the California Department of Public Health (CDPH) with regard to obtaining unrestricted radiological release (URR) for Hangar 296 and the sanitary sewer line (SSL) to manhole MH-15 and no further action (NFA) for the rest of the SSL to manhole MH-201-1 (near IRP Site 12). The Navy is expecting concurrence letters from CDPH and DTSC in the near future.

IRP Site 1 (Explosive Ordnance Disposal [EOD] Training Range) Soil

Ms. Rich added that DTSC responded to the Navy's draft April 2016 responses to comments (RTCs) on the FS. DTSC sent comments via email on 20 June 2016, 6 September 2016, and 8 March 2017, and has had multiple phone conversations with the Navy. She believes that DTSC has responded in full to the Navy's RTCs. The Resource Conservation and Recovery Act post-closure care requirements are one of the main issues that needs further discussion.

Mr. Pribyl continued with his update on IRP Site 1. The Action Memorandum was finalized and distributed today, the Fact Sheet had been updated and submitted, and the Draft Final SAP was released. Mr. Pribyl indicated that the Draft Final WP would be released within the next couple of weeks. MC sampling was conducted from 24 through 26 July 2018. The data summary package is expected to arrive by the week ending 17 August 2018. Mr. Pribyl stated that the initial results were well below screening levels.

Mr. Pribyl stated that the cultural resources issues have been resolved. The Navy will be able to complete the full remedial action. The Navy included a Cultural Resources Monitoring Plan with the Draft Final WP.

The Third-Party QAPP will be finalized within a week after the Draft Final WP is issued. The Navy will ensure that relevant Agency comments on the Draft Final WP would be implemented in the final version of the QAPP.

Mr. Chammas stated that the Navy is continuing to work with the Federal Bureau of Investigation (FBI) to complete a "Fed-to-Fed" transfer. The transfer is being supported by an Environmental Summary Document for which the Navy will submit courtesy RTCs and a final version in the near future. Ms. Rich stated that DTSC had commented on the MOU in January 2017. USEPA also reviewed and provided a response via email in February 2017. Mr. Smits stated that the responses were given to Ms. Erica Spinelli (Deputy Base Closure Manager) for review.

IRP Sites 1 and 2 Groundwater

Mr. Bollweg provided an update on groundwater at IRP Sites 1 and 2. He stated that the selected remedy for perchlorate in IRP Site 1 groundwater is in situ bioremediation with performance monitoring. The

selected remedy for volatile organic compounds (VOCs) in IRP Site 2 groundwater is monitored natural attenuation. Mr. Bollweg stated that the next LTM event will be conducted in March 2019, following the next planned injection of additional substrate in early 2019. Mr. Bollweg added that the Draft 2017 Annual Monitoring Report is expected to be issued by the end of September 2019.

Landfills (IRP Sites 2, 3, 5, 17, and Anomaly Area 3 [AA3])

Ms. Drake provided an update on the landfills, stating that the next monitoring event is scheduled for December 2018. A Final Monitoring Well Installation and Destruction Report, issued in July 2018 as an appendix to the Final 2017 Semiannual O&M/LTM Report, summarizes the well replacement activities conducted in 2017 at IRP Sites 2, 3, and AA3.

Ms. Drake stated that construction at AA3 by FivePoint Communities, Inc. (FPC) is being conducted pursuant to the approved combined Project Environmental Review Form (PERF)/Revised Final Work in the Covenant Area. During the December 2017 annual LFG monitoring event, elevated VOC readings were observed in the AA3 gas monitoring probes using a photoionization detector; however, laboratory analytical results confirmed that the detections were due to acetone, likely sourced from the construction adhesive used during probe modifications. These probes will continue to be monitored.

Ms. Drake stated that the IRP Site 5 Revised Wildlife Corridor (WLC) PERF was completed in November 2017. The fencing has been removed from the southern portions of the landfill and temporary construction fencing has been installed to protect landfill components in this area. This temporary fencing, as well as the existing perimeter landfill fencing, will remain in place until permanent fencing is installed in December 2018 along the WLC perimeter, which will encompass all of IRP Site 5. Ms. Rich requested that the figure in the CRUP be updated to show the intended location of the final WLC fence line and to note the anticipated changes in site layout upon completion of the WLC project. Ms. Drake said that these details will be added to the CRUP figure.

Ms. Drake added that the Navy has agreed to conduct one additional year of quarterly LFG monitoring at all the landfills as final concurrence from OCHCA for reducing or eliminating monitoring was not previously obtained, even though protocols in the governing CERCLA O&M/LTM documents were being followed. It was recently brought to the Navy's attention that OCHCA typically does not approve monitoring frequencies of less than quarterly without a formal application for exemption.

Ms. Drake stated that the Draft 2016 Annual O&M/LTM Report is being reviewed by DTSC. Ms. Rich indicated that DTSC would document the recent change in LFG monitoring frequency in its comments. The final version of this document is expected to be completed in August or September 2018.

IRP Site 3, Waste Area C1

Mr. Bollweg stated that IRP Site 3 landfill waste was located underneath Irvine Boulevard at Waste Area C1. He indicated that a site investigation was conducted in May 2016 to determine the extent of the waste. A Draft Technical Memorandum was completed following the site investigation. The Navy is working with property owners, stakeholders, and the BCT to establish appropriate institutional controls to be formalized in a forthcoming LUC and Explanation of Significant Differences (ESD).

IRP Site 16 (Crash Crew Training Pit No. 2)

Ms. Drake stated that O&M/LTM activities are ongoing, with the next semiannual monitoring event scheduled for December 2018. Preliminary results of the June 2018 monitoring event show a decrease in TCE concentrations below the RG of 5 µg/L in the downgradient wells along the western ARIC

boundary. During the December 2017 monitoring event, a significant increase was reported in source wells. For example, TCE concentrations in monitoring well 16_MW19 had increased from 1.1 to 150 µg/L. Ms. Drake added that the increased concentrations are possibly a result of the shallow TCE plume being pulled into deeper groundwater screens as a result of the continued regional groundwater table decline.

Ms. Drake added that on 2 July 2018, DTSC's Human and Ecological Risk Office provided additional comments to the Navy, requesting supplemental supporting language and data to be added to the human health risk assessment in the Draft Final RACR because the current discussion was considered inadequate to demonstrate that there is no unacceptable risk through vapor intrusion. The Navy is adding discussion to address this concern. Ms. Drake asked whether additional comments are expected from DTSC regarding the RACR. Mr. Chammas responded that most of the comments from DTSC have been received and the Navy can begin responding to them.

IRP Site 18 (PA)

Mr. Bollweg provided an update on IRP Site 18. The PA treatment system is operational, with very little downtime. IRWD is still trying to reach its 1000-gallon-per-minute pumping rate as required in the ESD for extraction well ET-1. Routine groundwater monitoring is ongoing. The Navy is currently updating the groundwater model and working with IRWD and OCWD to address inconsistencies. The next meeting with the water districts is scheduled for 7 August 2018, where the Navy will present the most recent changes to the groundwater model.

IRP Site 24 (SGU)

Mr. Bollweg provided an update on IRP Site 24. The SGU treatment system is operational, but some shutdowns have occurred because of redevelopment activities by developers. The Navy has approved a PERF to make updates to the electrical system. The Navy is now running two electrical systems for the SGU.

Mr. Bollweg stated that routine groundwater monitoring is ongoing. He added that the Navy has had preliminary discussions with the City of Irvine regarding potential installation of solar panels in conjunction with construction of a new parking area in CO III-B-3.

Mr. Bollweg stated that groundwater monitoring wells 18PS5 and 18PS7 were recently destroyed. FPC provided a well destruction report on 31 July 2018.

Mr. Chammas added that the Agencies have approved passive sampling devices for use at IRP Site 24 and the Navy is working on a WP to implement their use. The Navy will take corresponding samples with and without passive samplers to compare sampling results.

Agenda Item 3. IRP Site 1 Adjacent Property TCRA Update (Attachment 4):

Slide 1: Title. Mr. Pribyl introduced himself.

Slide 2: Presentation Organization. The slide includes a list of topics discussed in the presentation: Presentation and Overview, Site Maps and Orientation, Background, Historical Summary/Conceptual Site Model (CSM), Progress Update, Technical Approach, Schedule, and Summary. Mr. Pribyl gave an overview of each section included in the presentation.

Slide 3: Presentation Overview. Mr. Pribyl reviewed the main takeaways of the presentation, including the investigation history of IRP Site 1, the CSM, and the comprehensive TCRA (2018). Mr. Pribyl stated that the Navy has a solid understanding of the site. As the Navy moves forward, it will continue to assess whether the conditions match the CSM. Mr. Pribyl explained that the 2018 TCRA will include MC sampling, excavation and mechanical screening, digital geophysical mapping (DGM), intrusive investigation, and backfill and restoration. He stated that the material potentially presenting an explosive hazard (MPPEH) previously found were all located in Area C.

Slide 4: Location Map. The slide contains a map of Former MCAS El Toro. IRP Site 1 and the Adjacent Property are notated on the map. The EOD Training Range is included in IRP Site 1, and the Adjacent Property has subareas that are described on the next slide.

Slide 5: Site Map. The slide shows a figure with the following features labeled: Adjacent Property (TCRA), Agua Chinon Retarding Basin (owned by Orange County Flood Control District), Area C (owned by The Irvine Company), Area B (TCRA) (owned by Orange County Flood Control District), Area B (Remedial Action), EOD Training Range Perimeter Fence, Northern and Southern EOD Training Range Boundaries, IRP Site 1, and the Former MCAS El Toro boundary. Mr. Pribyl stated that the next slide lists the corresponding areas of each feature.

Slide 6: Background – IRP Site 1 Soil. Mr. Pribyl briefly reviewed the acreage of the features in the Slide 5 Site Map. The EOD Training Range (Navy property) is approximately 74 acres, the Adjacent Property (never Navy-owned) is approximately 56.1 acres, and the Adjacent Property (TCRA) will include 20 acres.

Slide 7: Historical Summary/CSM. Mr. Pribyl reviewed the previous investigations conducted at the EOD Training Range and Adjacent Property. Munitions characterization efforts were conducted in 2002 and 2008. The 2008 munitions characterization extended into the Adjacent Property, which prompted the Navy to take action on the Adjacent Property. In the 2010 TCRA, surface and subsurface soil was removed from the Adjacent Property. A total of 92% of all 2010 TCRA targets investigated were in the top 5 inches of soil, and 99% of all the munitions and explosives of concern (MEC) items recovered were in the top 8 inches. The CSM was developed on the basis of the investigations. The main MEC item of concern was the 20-millimeter (mm) explosive round. The density of MPPEH is approximately 1 item per acre.

Slide 8: 20-mm Explosive Round. The slide shows two examples of 20-mm explosive rounds. Most of the material removed during the 2010 TCRA was just the projectile, which is about the size of a golf ball. In the right photo, the contents shown in the bucket are from the 2008 investigation of the EOD Training Range, but they are consistent with items found on the Adjacent Property during the 2010 TCRA.

Slides 9 and 10: Progress Update. Mr. Pribyl reviewed actions that had been completed. MC sampling was completed on 26 July 2018. The Navy is working toward unrestricted use for the site. Mr. Pribyl stated that the Final Revision 1 Action Memorandum had been posted on the BRAC website. He also explained that the Cultural Resources Monitoring Plan that is included in the Draft Final WP is currently being finalized. The Navy has also dedicated significant resources to support biological monitoring and management through the fieldwork.

Slide 11: Technical Approach. As part of the TCRA, the Navy was required to address cultural and biological resources. The Navy received concurrence from the State Historic Preservation Office that a cultural site located in the Adjacent Property is not eligible for listing on the National Register of Historic Places. However, as a conservative measure, the Navy will have a full-time cultural monitor on site during fieldwork in Area C. Two biological resources of concern are at the site: coastal California

gnatcatcher and least Bell's vireo. Biological monitoring is ongoing and a full-time biologist will be on site when heavy equipment is in use during the TCRA.

Slides 12 and 13: Technical Approach: Adjacent Property. Slide 12 contains a flow chart for the technical approach for the Adjacent Property (TCRA) area. The approach is consistent with Alternative 4 in the 2014 FS. The technical approach for the Agua Chinon Retarding Basin will include no initial excavation and no MC sampling because there has been historical excavation and continuous maintenance in that area. The Navy is attempting to achieve site restoration and an unrestricted use designation. Slide 13 describes the study boundaries and discusses MC sampling. The focus of Slide 13 is representative sampling unit (SU) placement. The Navy collected surficial soil at a depth of less than 4 inches below ground surface. Regarding MC sampling, seven project area ISM SUs and two background ISM SUs were chosen.

Slides 14, 15, 16, and 17: Technical Approach: Areas B (TCRA) and C. Slide 14 contains a figure indicating ISM SUs in Areas B (TCRA) and C. Two SUs are visible in Area B (TCRA), five SUs are visible in Area C, and two SUs are outside of the Adjacent Property boundary and samples from these areas will function as background samples. The dots on the figure indicate the locations where material documented as safe and material documented as an explosive hazard were found during the 2010 TCRA. Slide 15 provides details on the grid sampling. Three composite samples will be collected per grid: primary, replicate, and triplicate. Triplicate samples will be collected in a different sequence and orientation to make sure bias is not created by the order of collection. Area C and the background SUs contain 7x7 grids with 49 increments. Area B (TCRA) SUs contain 5x5 grids with 30 increments. Slide 16 includes actions to be taken following sampling, including vegetation removal, excavation of the top 12 inches of soil, and soil screening. Slide 17 describes the process for DGM, can detect items at depths of 12–18 inches and narrows the focus. Intrusive investigations will be completed in areas surrounding the items identified by the DGM. After this process, the site will be backfilled and revegetated with a native plant seed mix.

Slide 18: Technical Approach: Agua Chinon Retarding Basin. The Navy will not conduct MC sampling in the Agua Chinon Retarding Basin. Vegetation will be trimmed, rather than removed, to support site restoration efforts. The vegetation will be trimmed to allow DGM and intrusive investigation. After DGM and intrusive investigation, the site will be backfilled and restored.

Slide 19: Contingent Technical Approach. When excavating, it may be necessary for the Navy to use different pieces of equipment or to change the approach angle. The Navy may need to use a portable DGM or metal detector.

Slide 20: Schedule. Mr. Pribyl reviewed the schedule:

- Issue Draft Work Plan – early August 2018
- Implement TCRA – late August 2018
- Complete TCRA – late September 2018
- Issue Draft Removal Action Report – November 2018

Slide 21: Summary: Mr. Pribyl briefly reviewed the presentation.

Slide 22: Acronyms

Slide 23: Navy Contact Information

Mr. Pribyl completed the presentation, and the meeting members offered suggestions for the evening's RAB presentation. Ms. Rich suggested that Mr. Pribyl mention the acronym list in the beginning and read from Slide 6 to describe Slide 5.

Ms. Rich said that the preferred alternative is not in the FS and the Proposed Plan is still in the draft phase. Ms. Rich recommended removing the bullet that discusses the preferred alternative. On Slide 11, the second bullet under Remedial Action was replaced with "EOD Training Range."

Mr. Smits recommended focusing the presentation on the remedial approach rather than on the site background. Mr. Smits also asked Mr. Pribyl to explain why the Navy is removing 12 inches of soil (the Navy does not believe it will find anything with DGM after removing 12 inches of soil).

Mr. Pribyl asked that the bullets labeled "Presentation Overview" and "Presentation Organization" on Slide 2 be switched.

Ms. Rich stated that the goal of the remedial action should be added to the final summary. The Navy's goal to achieve an unrestricted use designation was added in a bullet on the final summary slide.

All slides edits were completed prior to the RAB meeting.

Agenda Item 4. Review Action Items and Closing Remarks:

Review of action items (described above). Ms. Robinson reviewed the next BCT and RAB meeting dates, which will be 20 March and 7 August 2019.

The meeting adjourned at 1715.

Former MCAS El Toro BCT Meeting Agenda
1 August 2018

Date:	1 August 2018	**Time:**	1400–1645	**Location:**	Wood PLC 121 Innovation Drive, Suite 200 Irvine, CA 92617 (949) 642-0245
Leader:	Marc P. Smits, PE	**Recorder:**	Katy Robinson, GIT	**Timekeeper:**	Navy Staff

Time	Topic	Leader(s)	Pre-Meeting Preparation	Activities/Expectations
1400–1445	BCT Core Meeting	Smits/ Chammas	None	Activities: • Discuss team issues/topics. Expectations: • Achieve concurrence on program items and approach.
1445–1530	Environmental Schedules/ Environmental Status Update	Navy Team	None	Activities: • Provide overview of IRP sites and key issues. • Review schedules, upcoming submittals, and fieldwork. Expectations: • Achieve understanding of project statuses and schedules. • Provide regular updates and resolve any outstanding issues.
1530–1545	BREAK			
1545–1630	IRP Site 1 Adjacent Property Time-Critical Removal Action Update	Pribyl/ Roberts	None	Activities: • Update BCT on recently completed and planned TCRA activities. • Provide RAB dry run. Expectations: • Update BCT and solicit comments on RAB presentation.
1630–1645	Review Action Items and Upcoming Meeting Schedule	Smits/ Team	None	Activities: • Review action items. • Review upcoming meeting and teleconference schedules.

♦ Next special topic BCT Meeting – TBD	♦ BCT overview meetings/teleconferences – Monthly (fourth Wednesday) at 1300 hours
♦ Next scheduled regular BCT Meeting – TBD	♦ Next scheduled RAB Meeting – TBD

Former MCAS El Toro BCT Meeting Agenda
1 August 2018

DISTRIBUTION:

BRAC PMO
Marc P. Smits (BEC)
Guy Chammas (LRPM)
Rich Pribyl (EES)
Alex Bollweg (EES)
Kristyn Drake (EES)
George (Pat) Brooks (BLTL)
Erica Spinelli (DBCM)
Alan Lee (BCM)

USEPA
Mary Aycock
Viola Cooper

RWQCB
Patricia Hannon
Cindy Li

DTSC
Jennifer Rich
Scott Warren
Greg Shaffer

FivePoint/Heritage Fields
Jim Werkmeister

City of Irvine
Debby Platt

Tetra Tech EC, Inc.
Ian Roberts, PMP

DOCUMENT STATUS MATRIX
FORMER MCAS EL TORO
1 August 2018

PRIORITY*	SUBMITTED	Version	DATE TO BCT Planned	DATE TO BCT Actual	Comments Due
1	Independent Third-Party QAPP for IRP Site 1 TCRA	Draft		7/6/2018	7/20/2018
2	Site 5 CRUP and Pertinent Deed Language	Draft		7/17/2018	ASAP
3	Draft Final IRP Site 16 Deep Vadose Zone Remedial Action Completion Report	RTCs		3/13/2018	4/6/2018
4	Draft Tech Memo – IRP Site 3, Waste Area C1 Subsurface Investigation	RTCs		3/16/2018	4/6/2018
5	Draft 2017 Annual Remedy Status Report, IRP Sites 18 & 24	RTCs		7/6/2018	7/20/2018
6	Addendum 1 to Draft Site Closure Report for Groundwater, UST Site 398	Draft (RWQCB only)		5/11/2018	6/11/2018
7	IRP Sites 1&2 GW Monitoring Report (September 2016–December 2017)	Draft		6/19/2018	8/13/2018
8	2016 Annual Landfills O&M/LTM Report	Draft	5/11/2018	5/11/2018	7/10/2018
9	2017 Annual Long-Term Groundwater Monitoring Report, IRP Site 16	Draft	June 2018	7/9/2018	8/13/2018

*Site 1 documents will take priority over all others as they are submitted

UPCOMING – FOR REVIEW

SITE 1				
Site 1 Munitions Consituent Sampling Summary	Final	8/10/2018		
Site 1 TCRA Work Plan, with appendicies	Draft Final	8/10/2018		8/31/2018
Feasibility Study	Responses to RTCs	*		
Proposed Plan	Responses to RTCs	*		
SITES 1 & 2 GROUNDWATER				
Additional Substrate Injection Work Plan	Draft	Oct. 2018		
LANDFILLS (SITES 2, 3, 5, 17, and AA3)				
AA3 After-Action Report (FPC Deliverable)				
2016 Annual Landfills O&M/LTM Report	RTCs	Aug. 2018		
2017 Annual LTM/O&M Report	Draft	Oct. 2018		
SITE 16				
Model Update Technical Memorandum	Draft	Oct. 2018		
SITES 18 & 24				
Passive Sampling Device Installation Work Plan	Draft	Aug. 2018		
Model Update Technical Memorandum	Draft	Oct. 2018		
FINDING OF SUITABILITY TO TRANSFER				
FOST #10 for Carve-Outs II-D-2, II-F-2, II-V-2, and III-B-3	Draft	Oct. 2018		
PERFs/WIEAs/WICAs				
None at this time				

*pending further coordination with DTSC at J. Rich's request

UPCOMING – FINAL

SITE 1				
Environmental Summary Document/FBI MOU	RTCs (courtesy)	8/17/2018		
Environmental Summary Document/FBI MOU	Final	8/24/2018		
Site 1 TCRA Work Plan, with appendicies	Final	Sept. 2018		
SITE 3, WASTE AREA C1				
City of Irvine–Heritage Hills Agreement for Institutional Controls	Final	Sept. 2018		
Tech Memo – IRP Site 3, Waste Area C1 Subsurface Investigation	Final	Oct. 2018		
SITE 16				
Deep Vadose Zone RACR	(Pre?) Final	Sept. 2018		
2018 Semiannual Data Summary Report	Final	Sept. 2018		
LANDFILLS (SITES 2, 3, 5, 17, and AA3)				
Monitoring Well Installation and Destruction Work Plan Addendum for IRP Site 5	Final	Aug. 2018		
Letter to OCHCA Regarding Quarterly LFG Monitoring Agreement	Final	Aug. 2018		
2018 Semiannual O&M/LTM Report	Final	Dec. 2018		

FIELDWORK*

Site 1 TCRA Munitions Constituent Sampling	Completed on 7/26/2018
Site 1 TCRA Geophysical Investigation	Planned for 8/20/2018–9/12/2018
UST Site 398 LNAPL Removal	September 2018
Site 24 Long-Term Monitoring	September 2018
Landfills (Sites 2, 3, 5, 17, AA3) O&M/LTM	December 2018
Site 16 Long-Term Monitoring	December 2018
Sites 1 & 2 Substrate Injections	January 2019
Sites 1 & 2 Long-Term Monitoring	March 2019

*Schedule dependent on approval of final work plans, as applicable

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FORMER MCAS EL TORO ENVIRONMENTAL STATUS
1 August 2018

Finding of Suitability to Transfer (FOST) #8

- Final FOST #8 included Carve-Outs (COs) II-C, II-D-1, and II-H
- COs II-C and II-D-1 have been transferred to Heritage Fields (II-C subsequently transferred to Heritage Hills)
- CO II-H was not transferred pending the results of the basewide investigation of potential per- and polyfluoroalkyl substances (PFAS) in groundwater
- No PFAS concentrations above screening levels were found at Installation Restoration Program (IRP) Site 5/CO II-H, so formal transfer in this fiscal year is proceeding

►*Documents Currently in Review*

- Draft CRUP and Quitclaim Deed for CO II-H

►*Documents Scheduled for Submittal in August–September 2018*

- Final CRUP and Quitclaim Deed for CO II-H

►*Recently Finalized Documents*

- None

FOST #9

- Final FOST #9 included CO II-F-3
- CO II-F-3 transferred to Heritage Fields and subsequently to Heritage Hills

►*Documents Currently in Review*

- None

►*Documents Scheduled for Submittal in August–September 2018*

- None

►*Recently Finalized Documents*

- None

FOST #10

- FOST #10 will address COs II-D-2, II-F-2, II-V-2, and III-B-3
  - COs II-F-2 and II-V-2 are awaiting U.S. Environmental Protection Agency Determination of Operating Properly and Successfully (OPS) for the remedy at IRP Sites 1 and 2 (Groundwater)
  - CO III-B-3 is awaiting concurrence on unrestricted radiological release (URR)/no further action (NFA) for remediated radiological impacts at Hangar 296 and its associated piping

- CO II-D-2 is currently ready (not awaiting any additional documentation)
- All four COs scheduled for FY19 transfer

Basewide Assessment of PFAS in Groundwater

- Based on previous military activities that may have involved the use of PFAS-containing materials such as aqueous film-forming foam, groundwater samples were collected in the vicinity of IRP Sites 1, 2, 5, 9, 16, 18, and 24 in July 2017 in accordance with the Final Sampling and Analysis Plan (SAP) for Initial Basewide Assessment of PFAS in Groundwater (June 2017)
- Validated results indicate impacts above screening levels at IRP Sites 1, 18, and 24, but not at IRP Sites 2, 5, 9, and 16; results were provided in a final report dated November 2017
- The Navy is coordinating with Irvine Ranch Water District and Orange County Water District to determine the best course of action to address PFAS concerns at IRP Sites 18 and 24, with the next meeting scheduled for 7 August 2018.

►*Documents Currently in Review*
- None

►*Documents Scheduled for Submittal in August–September 2018*
- None

►*Recently Finalized Documents*
- None

Hangar 296 Radiological Site Inspection

- The Final Radiological Site Inspection (SI) Report, Hangar 296 and Associated Piping, was issued in April 2018. This report documented the results, conclusions, and recommendations for the SI and Final Status Survey activities conducted for Hangar 296 and associated piping. The Navy has consulted with the Department of Toxic Substances Control (DTSC) and California Department of Public Health (CDPH) with regard to obtaining URR for Hangar 296 and the sanitary sewer line (SSL) to manhole MH-15 and NFA for the rest of the SSL to manhole MH-201-1 (near IRP Site 12). Concurrence letters are pending.

►*Documents Currently in Review*
- None

►*Documents Scheduled for Submittal in August–September 2018*
- URR letter from CDPH and NFA letter from DTSC

►*Recently Finalized Documents*
- Final Radiological SI Report, Hangar 296 and Associated Piping

Installation Restoration Program Sites:
IRP Site 1 (Explosive Ordnance Disposal [EOD] Training Range) Soil

- Feasibility Study (FS): Received all regulatory agency comments; Navy submitted responses to comments on the FS in April 2016
- Responses from DTSC are pending its further internal discussions regarding Resource Conservation and Recovery Act post-closure care requirements

- The Navy continues to work with the BCT and stakeholders including adjacent property owners to evaluate schedule and options to move the project forward
- The Navy is executing a time-critical removal action (TCRA) on a portion of the Adjacent Property. Munitions constituent sampling was completed on 26 July 2018, and the removal action is scheduled to begin in late August and be completed by the end of September. Other updates are as follows:
  - ✓ Final TCRA Fact Sheet was issued on 22 December 2017, and a revised/updated version was issued on 27 July 2018.
  - ✓ The Navy submitted a comprehensive cultural resources consultation package to the State Historic Preservation Office (SHPO) on 12 January 2018, requesting concurrence on its:
    - o definition of the Area of Potential Effects;
    - o determination that cultural site CA-ORA-1311 Locus B is not eligible for inclusion in the National Register of Historic Places pursuant to 36 Code of Federal Regulations (CFR) Section (§) 800.16(1)(2); and
    - o finding of "No Historic Properties Affected" in accordance with 36 CFR §800.4(d)(l).
  - ✓ DTSC's Office of Environmental Justice and Tribal Affairs did not receive any comments by the close of the review period, and SHPO concurred with the Navy's consultation package on 6 March 2018
  - ✓ All comments received on the Draft Final Action Memorandum on 16 March 2018. The Final Action Memorandum (Revision 1) was released in July 2018.
  - ✓ Draft final planning documents (Work Plan and supporting appendices) are scheduled for release by 10 August 2018.
  - ✓ Draft Independent Third-Party Quality Assurance Project Plan was released for review in July 2018.
  - ✓ The Navy is continuing to work with the Federal Bureau of Investigation to complete a Fed-to-Fed transfer of approximately 74 acres (EOD Training Range).

  ►*Documents Currently in Review*
    - FS Responses to Comments

  ►*Documents Scheduled for Submittal in August–September 2018*
    - Draft Final TCRA Work Plan
    - Final TCRA Work Plan
    - Final Independent Third-Party Quality Assessment Project Plan
    - Munitions Constituent Sampling Summary
    - Final Transfer Explosives Safety Submission
    - RTCs (courtesy) on Draft Environmental Summary Document
    - Final Environmental Summary Document

  ►*Recently Finalized Documents*
    - Final Action Memorandum (Revision 1)

IRP Sites 1 & 2 Groundwater

- Long-Term Monitoring (LTM): Performance monitoring is underway with the next monitoring event scheduled for March 2019. This monitoring event will be the first following the injection of additional substrate scheduled for January 2019.

- Designation of the remedy as OPS will allow for the remaining property in this area (COs II-F-2 and II-V-2) to be transferred.

►*Documents Currently in Review*

- Draft 2017 Annual Monitoring Report

►*Documents Scheduled for Submittal in August–September 2018*

- Final 2017 Annual Monitoring Report

►*Recently Finalized Documents*

- None

Landfills (IRP Sites 2, 3, 5, 17, and Anomaly Area 3 [AA3])

- The next monitoring event for the landfills is scheduled for December 2018.
- The Final Monitoring Well Installation and Destruction Report summarizing the well replacement activities at IRP Sites 2, 3, and AA 3 conducted in 2017, was issued as an appendix to the Final 2017 Semiannual O&M/LTM Report.
- A Draft Monitoring Well Installation and Destruction Work Plan Addendum is currently being prepared for the replacement of three dry downgradient wells at IRP Site 5. This work is anticipated to occur in fall 2018, prior to the next scheduled monitoring event.
- Construction at AA3 by FivePoint Communities, pursuant to the combined Project Environmental Review Form/Revised Final Work in Covenant Area (finalized 9 November 2017), is ongoing.
  - ✓ Soil placement and grading is 100% complete. No waste was encountered during the grading operations.
  - ✓ Construction of the parking lot and the retaining wall within the Navy covenant area is complete.
  - ✓ Construction of the recreation center and other facilities outside the Navy covenant area is ongoing.
  - ✓ Construction within the Navy covenant area including the tennis courts, some utility installations, and the decomposed granite walkway is ongoing. These are anticipated to be completed in the next 2 to 3 months.
  - ✓ The landscape enhancement work (grass and plants) on top of the landfill and within the future park area is also ongoing.
  - ✓ All Navy GVs and GTRs are protected. Once all the redevelopment work is complete, final completion of gas monitoring probes (GMPs) 04 and 05R and groundwater monitoring wells MW-06R, MW-13R, MW-09A, and MW-05R will be performed within the future park area.
  - ✓ Final well casing adjustments have been completed for GMP-01, MW-01R, and MW-02R.
- During the December 2017 annual monitoring round, higher VOC readings were observed at a few of the AA3 GMPs using a photoionization detector; however, laboratory analytical results confirmed that it is was acetone from the construction adhesive used during well modifications. No methane was detected at any of the monitoring locations. Details of this monitoring event will be provided in the 2017 Annual O&M/LTM Report. VOC readings continue to be elevated at GMP-04. The Navy will continue to monitor this probe and evaluate options for future monitoring.
- IRP Site 5 Revised Final Wildlife Corridor PERF (dated 29 November 2017)
  - ✓ Grading within the LIFOC boundary, per the approved PERF, was completed in April 2018.

- ✓ Required existing fence was removed from the SW and SE corners of the landfill, along the Wildlife Corridor. A land survey was completed, and ground markers for the Navy landfill gas monitoring trench and anchor key and liner were installed. Orange construction ("snow") fencing has been installed temporarily around the landfill perimeter and features until the permanent exterior Wildlife Corridor fencing has been installed by the developer.
- ✓ A portion of the gravel access road was removed. No waste was observed during shallow trenching activities in the SW corner.

- LTM: 2018 performance monitoring is ongoing. All established monitoring frequencies will resume for new replacement wells installed at IRP Site 5. The next LTM event is scheduled for December 2018.

►*Documents Currently in Review*
- Draft 2016 Annual O&M/LTM Report

►*Documents Scheduled for Submittal in August–September 2018*
- Final 2016 Annual O&M/LTM Report
- Final Monitoring Well Installation Work Plan Addendum, IRP Site 5

►*Recently Finalized Documents*
- Final 2017 Semiannual O&M/LTM Report

IRP Site 3, Waste Area C1

- The Navy submitted RTCs on 16 March 2018 to the regulatory agencies on the Draft Technical Memorandum – Subsurface Investigation. Awaiting DTSC comments and/or concurrence with the RTCs. The Navy is working with property owners, stakeholders, and the BCT to establish appropriate institutional controls. This will be formalized in a forthcoming CRUP and Explanation of Significant Differences.

►*Documents Currently in Review*
- RTCs on Draft Technical Memorandum – Subsurface Investigation

►*Documents Scheduled for Submittal in August–September 2018*
- CRUP between DTSC, Heritage Hills, and City of Irvine
- Final Technical Memorandum – Subsurface Investigation

►*Recently Finalized Documents*
- None

IRP Site 16 (Crash Crew Training Pit No. 2)

- O&M/LTM activities are ongoing with the next semiannual monitoring event scheduled for December 2018.
- Preliminary results of the June 2018 monitoring event show a decrease in TCE concentrations below the RG (5.0 µg/L) in the downgradient wells along the western ARIC boundary.
- Increasing concentrations of TCE in the source area wells were noted during the 2017 monitoring period. It is anticipated that the increased concentrations are potentially attributed to the declining groundwater levels, exposing more of the shallow TCE plume into the deeper well screens. The preliminary data collected in June 2018 further support this explanation, as concentrations from source area wells 16_MW10 (bailed dry) and

16_MW19 had TCE concentrations of 140 µg/L, 16_MW31A had a TCE concentration of 14 µg/L, and 16_MW04 (bailed dry) had a TCE concentration of 33 µg/L.

- Groundwater model in the process of being updated and recalibrated.
- The Navy submitted RTCs on the Draft Final Deep Vadose Zone Remedial Action Completion Report and presented its rationale for closure in a March 2018 BCT presentation.
- On 2 July 2018, DTSC/HERO provided additional comments to the Navy, requesting supplemental supporting language and data be added to the HHRA in the Draft Final RACR as the current discussion was considered inadequate to demonstrate there is no unacceptable risk through vapor intrusion and the remedy is protective of human health and the environment.

►*Documents Currently in Review*

- RTCs on Deep Vadose Zone Draft Final Remedial Action Completion Report
- Draft 2017 Annual Long-Term Groundwater Monitoring Report

►*Documents Scheduled for Submittal in August–September 2018*

- Final Deep Vadose Zone Remedial Action Completion Report
- Final Semiannual 2018 Data Summary Report

►*Recently Finalized Documents*

- None

IRP Site 18 (Principal Aquifer)

- The PA treatment system is operational with groundwater from extraction well ET-1 being treated to below 0.5 µg/L.
- Hydraulic containment wells ET-2 and IRWD-78 continue to be monitored to determine whether VOCs exceed respective MCLs. Groundwater extracted from these wells will be conveyed to the PA treatment system if VOCs are reported at concentrations exceeding respective MCLs.
- Based on the information provided in the last four IRWD Groundwater Treatment Systems Operations and Maintenance Summary Reports ("quarterly reports"), the average flow rates for wells ET-2 and IRWD-78 exceeded the 2006 ESD requirements. However, the Navy is concerned that the pumping rates provided in the IRWD quarterly reports are operational in nature and do not necessarily account for downtime.
- IRWD recognizes that there are still issues with well ET-1 meeting the 1,000 gpm 2006 ESD requirement; the average flow rate provided in the last quarterly report was 903 gpm.
- Routine groundwater monitoring is ongoing. Several technical issues have been identified with the current model which the Navy, IRWD, and their respective consultants are currently addressing before IRWD completes its capture zone analysis. Results from these model runs will be used in developing an ESD, if necessary, to modify the extraction configuration for the offsite wells.

►*Documents Currently in Review*

- RTCs on Draft 2017 Annual Remedy Status Report

►*Documents Scheduled for Submittal in August–September 2018*

- Final 2017 Annual Remedy Status Report
- Final 2018 Semiannual Data Summary

►*Recently Finalized Documents*
- None

IRP Site 24 (Shallow Groundwater Unit)

- SGU extraction, conveyance, and treatment systems are operational, with intermittent shutdowns related to protecting the system during ongoing redevelopment activities.
- The Navy previously approved a PERF for the City to make upgrades to the electrical supply for the extraction system. The Festival Site Switchgear, TVI transformer, and existing 12-kV feed have been eliminated in favor of a new direct connection to SCE and new transformer along Skyhawk.
- Routine groundwater monitoring is ongoing. Plan to optimize system components to ensure the longevity of the overall system.
- Activities are being conducted in and around the IRP Site 24 conveyance system as part of OCGP development. Coordinating closely with OCGP and developer representatives to ensure redevelopment does not impact the components of the system. One of the notable improvements being considered is optimizing the electrical system with a solar electric field. The Navy has had preliminary discussions with the City of Irvine regarding a potential installation of solar panels in conjunction with the construction of a new parking area in Carve-Out III-B-3. This provides an opportunity for the Navy and City to team to reduce the environmental footprint of the remedy.

►*Documents Currently in Review*
- RTCs on Draft 2017 Annual Remedy Status Report

►*Documents Scheduled for Submittal in August–September 2018*
- Final 2017 Annual Remedy Status Report
- Final 2018 Semiannual Data Summary

►*Recently Finalized Documents*
- None

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NAVFAC
Naval Facilities Engineering Command
FORMER MCAS El TORO

Time-Critical Removal Action (TCRA) Update

INSTALLATION RESTORATION PROGRAM SITE 1
FORMER MARINE CORPS AIR STATION EL TORO
IRVINE, CALIFORNIA

MARC P. SMITS, PE, Base Realignment and Closure (BRAC) Environmental Coordinator
RICHARD J. PRIBYL, Contracted Environmental Engineering Support
U.S. Department of the Navy (Navy) BRAC Program Management Office West
San Diego, California

1 August 2018

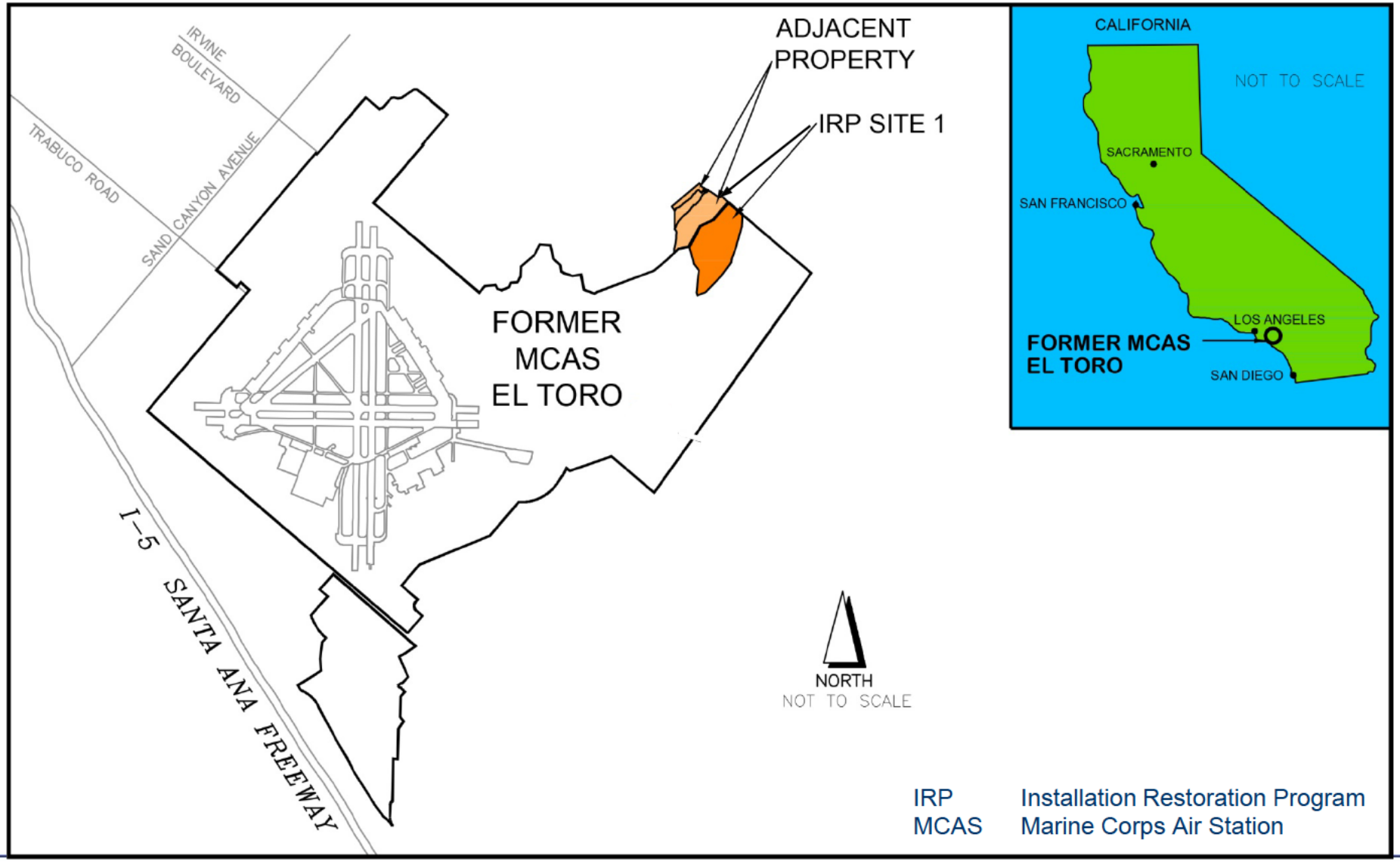
Presentation Organization

- Presentation Organization & Overview
- Site Maps & Orientation
- Background
- Historical Summary/Conceptual Site Model (CSM)
- Progress Update
- Technical Approach
- Schedule
- Summary

Presentation Overview

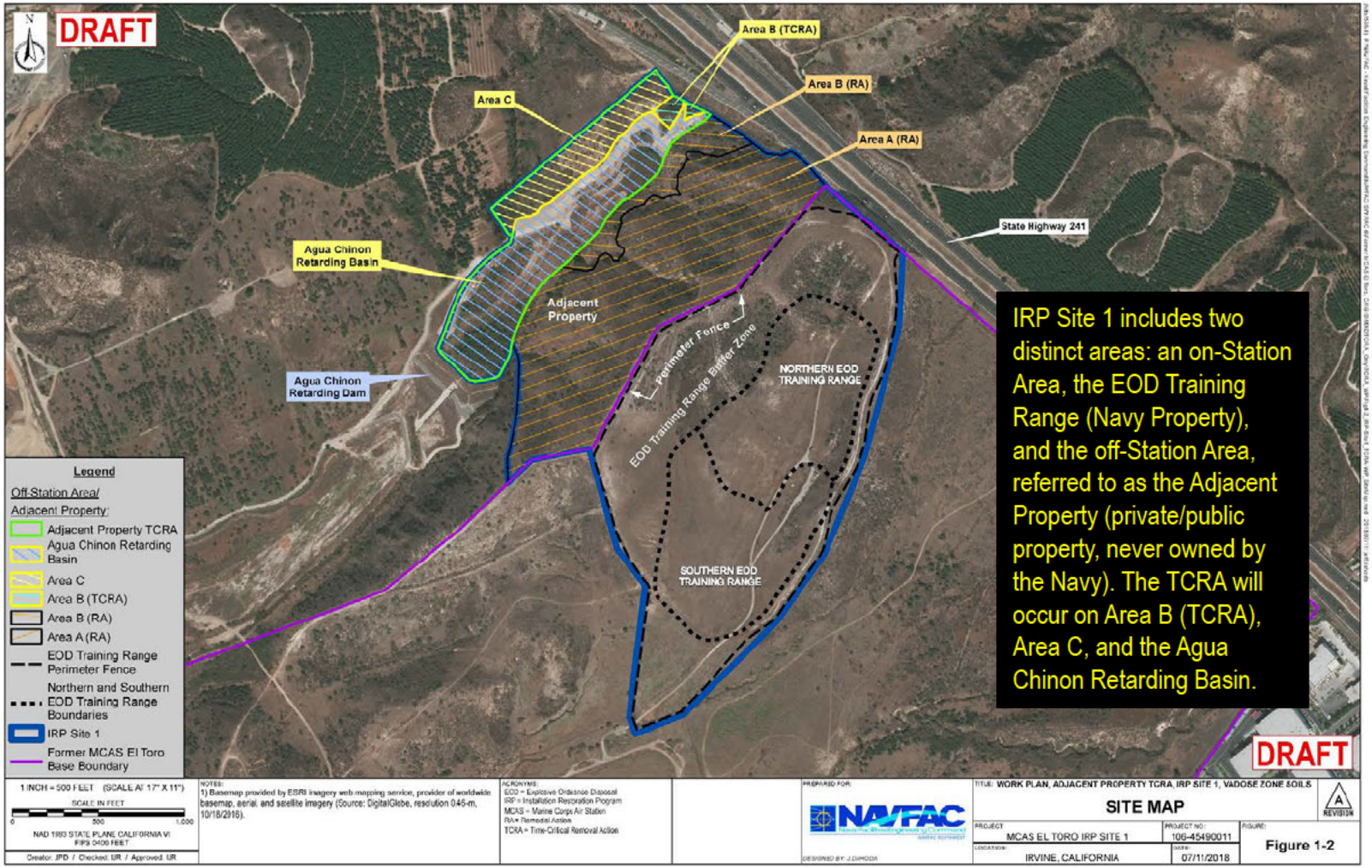
- **Significant Site Data**
  - Site characterizations (2002 and 2008)
  - Surface and subsurface removals (2010 TCRA)
- **CSM**
  - Shallow material potentially presenting an explosive hazard (MPPEH) from kick-outs
    - 2 munitions and explosives of concern (MEC)
    - 4 material documented as safe (MDAS) items
  - Validated through previous characterizations and removal action
- **Comprehensive TCRA (2018)**
  - Munitions constituents (MC) sampling
  - Excavation and mechanical screening
  - Digital geophysical mapping (DGM)
  - Intrusive investigation (to depth of detection to remove MPPEH)
  - Backfill and restoration

Location Map



IRP Installation Restoration Program
MCAS Marine Corps Air Station

Site Map


DRAFT
Area B (TCRA)
Area B (RA)
Area C
Area A (RA)
State Highway 241
Agua Chinon Retarding Basin
Adjacent Property
Perimeter Fence
EOD Training Range Buffer Zone
NORTHERN EOD TRAINING RANGE
Agua Chinon Retarding Dam
SOUTHERN EOD TRAINING RANGE
IRP Site 1 includes two distinct areas: an on-Station Area, the EOD Training Range (Navy Property), and the off-Station Area, referred to as the Adjacent Property (private/public property, never owned by the Navy). The TCRA will occur on Area B (TCRA), Area C, and the Agua Chinon Retarding Basin.
Legend
Off-Station Area/
Adjacent Property:
Adjacent Property TCRA Agua Chinon Retarding Basin
Area C
Area B (TCRA)
Area B (RA)
Area A (RA)
EOD Training Range Perimeter Fence
Northern and Southern EOD Training Range Boundaries
IRP Site 1
Former MCAS El Toro Base Boundary
1 INCH = 500 FEET (SCALE AT 17" X 11")
SCALE IN FEET
0 500 1,000
NAD 1983 STATE PLANE CALIFORNIA VI FIPS 0406 FEET
Creator: JPD / Checked: UR / Approved: UR
NOTES:
1) Basemap provided by ESRI imagery web mapping service, provider of worldwide basemap, aerial, and satellite imagery (Source: DigitalGlobe, resolution 0.46-m, 10/18/2016).
ACRONYMS
EOD = Explosive Ordnance Disposal
IRP = Installation Restoration Program
MCAS = Marine Corps Air Station
RA = Remedial Action
TCRA = Time-Critical Removal Action
PREPARED FOR:
NAVFAC
DESIGNED BY: J.DIMODA
TITLE: WORK PLAN, ADJACENT PROPERTY TCRA, IRP SITE 1, VADOSE ZONE SOILS
SITE MAP
REVISION A
PROJECT: MCAS EL TORO IRP SITE 1
PROJECT NO.: 106-45490011
LOCATION: IRVINE, CALIFORNIA
DATE: 07/11/2018
FIGURE: Figure 1-2
DRAFT

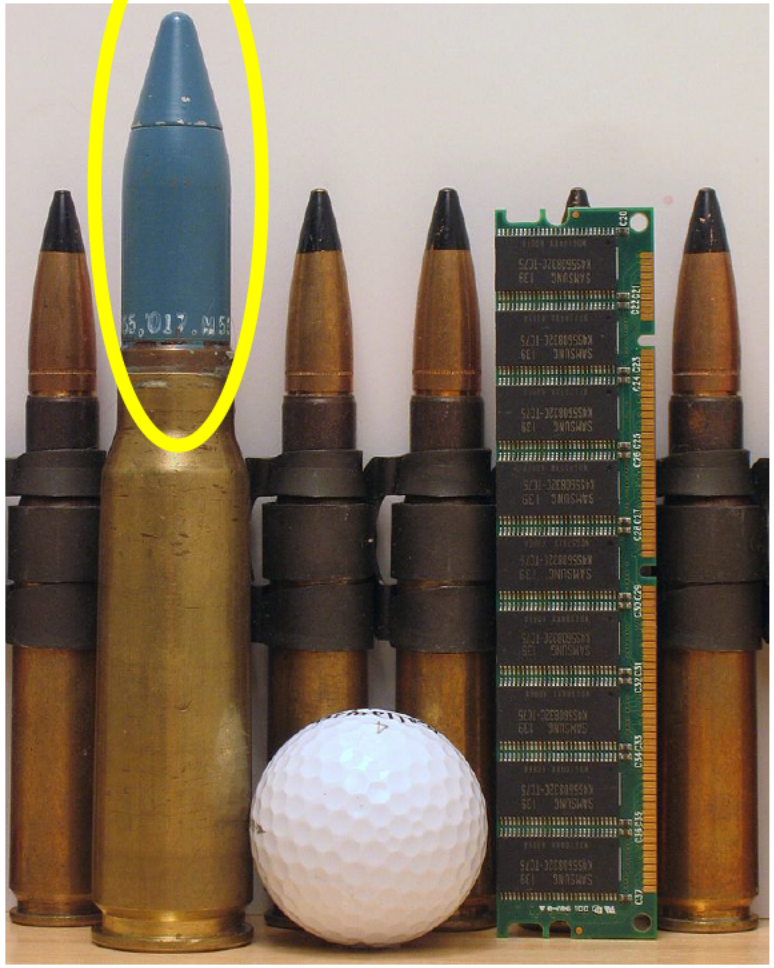
Background – IRP Site 1 Soil

- **EOD Training Range (Range)**
  - Approximately 74 acres
  - MEC-impacted soil and limited area of naphthalene-impacted soil (approximately 300 square feet)
- **Adjacent Property (never Navy-owned)**
  - 56.1-acre open space immediately west of the Range
    - Area A: 32.4 acres
    - Area B: 4.2 acres
    - Area C: 5.1 acres
    - Agua Chinon Retarding Basin: 14.4 acres
- **Adjacent Property (TCRA)**
  - Approximately 20 acres
    - Area B (TCRA): 0.5 acre
    - Area C: 5.1 acres
    - Agua Chinon Retarding Basin: 14.4 acres

Historical Summary/CSM

- **Previous Investigations/Actions**
  - 2002 Munitions Characterization (Range only)
  - 2008 Munitions Characterization (Range and Adjacent Property)
  - 2010 TCRA: surface and subsurface removals (Adjacent Property)
    - 92% of all 2010 TCRA targets investigated were in the top 5 inches
    - 99% of all MEC items recovered were in the top 8 inches
- **CSM**
  - Surface and shallow MPPEH from Range kick-outs
  - Primary MEC item of concern: 20-millimeter (mm) explosive round
  - 2008 and 2010 results support that most MPPEH has been removed from the Adjacent Property
  - Average density of MPPEH in TCRA area: ~1 item/acre
  - CSM validated through previous characterizations and removal action

20-mm Explosive Round



http://upload.wikimedia.org/wikipedia/en/7/71/50BMG_size_comparison.JPG, Ry Jones

U. S. Navy BRAC Program Management Office West

Progress Update

- **Draft Action Memorandum/Public Notice – 2 Nov 2016**
- **Final Accident Prevention Plan – 29 Dec 2016**
- **Final Explosives Safety Submission – 6 Mar 2017**
- ***Technical Approach Adjusted***
  - *Reduced TCRA area to 20 acres*
  - *Adopted site-specific unrestricted use protocol with soil sampling*
  - *Investigated a potential cultural resource area*
- **Draft Final Action Memorandum – 14 Feb 2018**
- **Final Action Memorandum – 24 July 2018**
  - Revision 1 – 27 July 2018
- **Draft Final Sampling and Analysis Plan – 24 July 2018**
- **MC Sampling – completed 26 July 2018**

Progress Update (cont.)

- **Cultural Resources**
  - On 6 Mar 2018, the Navy received State Historic Preservation Office concurrence that CA-ORA-1311 Locus B is not eligible for listing on the National Register of Historic Places
  - A cultural monitor will be on site during fieldwork in Area C
- **Biological Resources**
  - Potential for the coastal California gnatcatcher and least Bell's vireo
  - Biological management/monitoring is currently being performed
    - A preconstruction survey was conducted on 10 and 11 Feb 2018
    - Periodic site visits (~2 times a week) were reinitiated in Jun 2018
    - Full-time biological monitoring will be provided when major field activities begin at the end of Aug 2018
    - Results will be compiled for reporting process

Technical Approach

- **Areas B (TCRA), C & Agua Chinon Retarding Basin**
  - Follow Alternative AP4 and as described in the Action Memorandum and TCRA Work Plan
  - Revise planning documents (Action Memorandum and TCRA Work Plan) including preparation of a Sampling and Analysis Plan for MC sampling
  - Conduct removal action to support unrestricted use
  - Complete the TCRA (intended to be the final action for MEC-impacted soil)
  - Provide one-time notifications; 5-year reviews will not be required
- **Remedial Action**
  - Area A and the remaining portion of Area B
  - EOD Training Range

Technical Approach: Adjacent Property

1 IRP SITE 1 (Adjacent Property TCRA Area) – Historical Summary

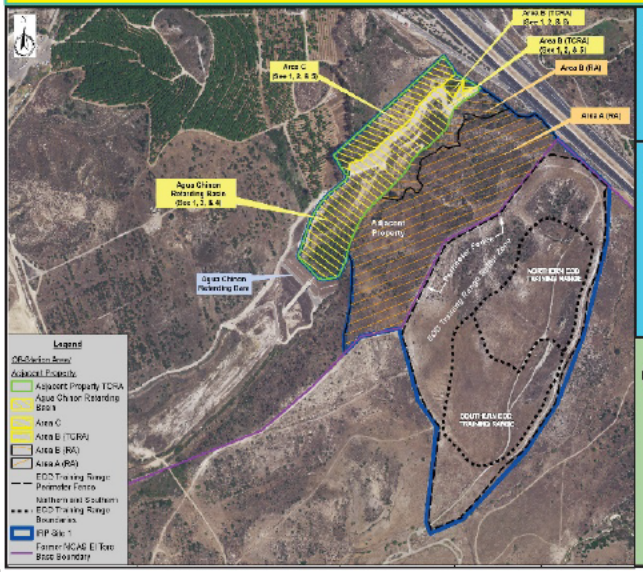
1952-1999 – MEC contamination due to kick-outs from EOD Training Range activities.

2010 Surface and subsurface clearance – Two MDEH items were recovered: one between 0 to 6 inches and one at 12 inches depth. Four MDAS items were recovered between 0 to 6 inches.

Conceptual Site Model – A majority of MEC items have been removed. The release mechanism (kick-outs) resulted in shallow MPPEH: CSM has been validated through previous characterization and removal activities.

2 TECHNICAL APPROACH – Adjacent Property Areas B (TCRA) and C

MC Sampling → Surface clearance and site preparation → Vegetation removal and excavation of 12 inches of soil → Mechanical screening and detector-aided scan of excavated soil → QA/QC of mechanical screening process → DGM of excavated areas (100% coverage) → DGM data processing and preparation of target list → QA/QC of data and target list → Intrusive investigation of individual targets to depth → QA/QC of intrusive operations → Return screened soil to excavation area → Site restoration



3 HISTORY – Aqua Chinon Retarding Basin

Constructed in 1998 → Entire area regraded → No reported munitions –related items → Minimal activity at the EOD Training Range from 1998–1999 → Regular maintenance performed in the basin area

4 TECHNICAL APPROACH – Aqua Chinon Retarding Basin

Surface clearance and site preparation → Vegetation removal → 100% DGM coverage → DGM data processing QC of target lists → Intrusive investigation of individual targets to depth → QA/QC of intrusive operations → Refill target investigation holes from spoils piles → Site restoration

5 CONTINGENCY APPROACH

It is anticipated that the technical approaches will provide clearance for the Adjacent Property but in the event the above technical approaches cannot be implemented in a small isolated area, one or more of the following will be applied:

Mechanical means – utilization of equipment as far up slopes as possible → Utilization of DGM surveys and intrusive investigations → Utilization of mag and dig operations → Visual inspection including photos and review of photos for potential impacts from EOD operations

DRAFT

ACRONYMS:
CSM = conceptual site model
DGM = digital geophysical mapping
EOD = Explosive Ordnance Disposal
MC = munitions constituents
MDAS = material documented as safe
MDEH = material documented as an explosive hazard
MEC = munitions and explosives of concern
MPPEH = material potentially presenting an explosive hazard
QA = quality assurance
QC = quality control
RA = remedial action
TRCA = Time-Critical Removal Action

WORK PLAN, ADJACENT PROPERTY TCRA, IRP SITE 1, VADOSE ZONE SOILS

ADJACENT PROPERTY (TCRA) TECHNICAL APPROACH SUMMARY

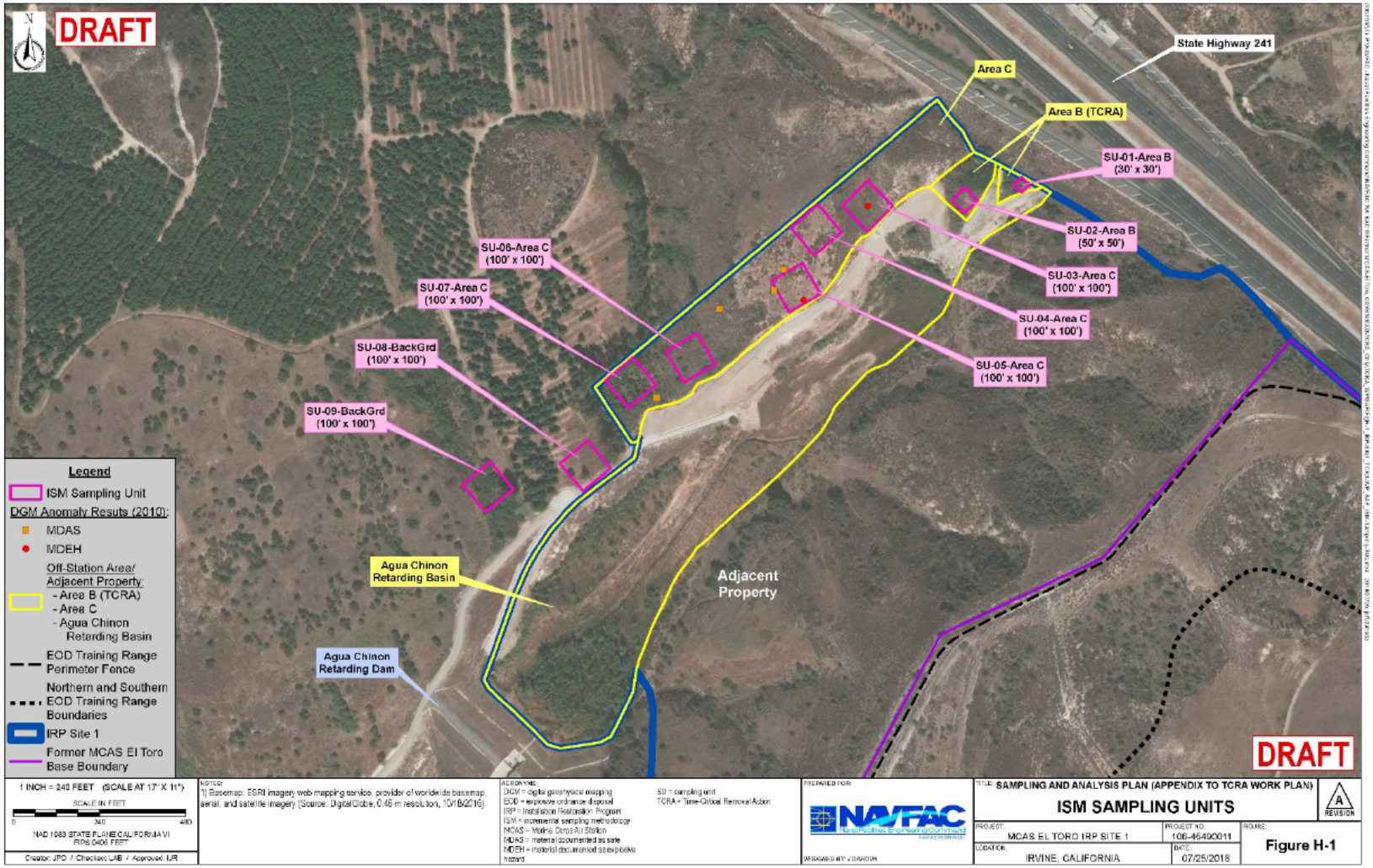
MCAS EL TORO IRP SITE 1 | 108-45490011 | IRVINE, CALIFORNIA | 10/12/2016

Figure 2-5

Technical Approach: Adjacent Property (cont.)

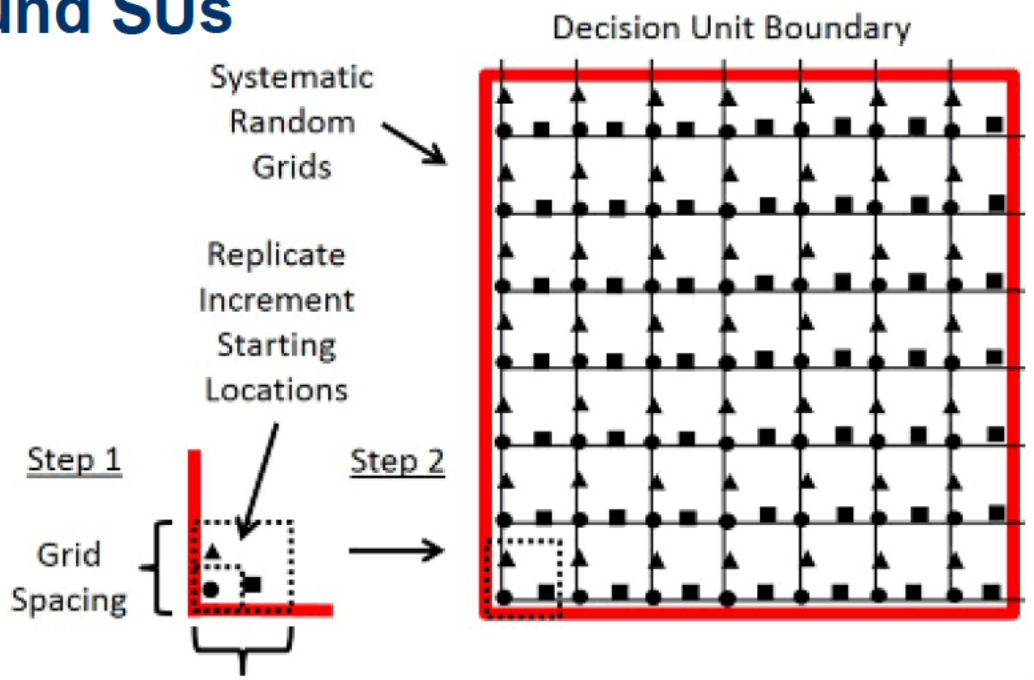
- **Study Boundaries**
  - Sampling unit (SU) placement
  - Surficial soil (<4 inches below ground surface) consistent with CSM and 2010 TCRA findings
- **MC Sampling**
  - 7 project area Incremental Sampling Methodology (ISM) grids or SUs
  - 2 background ISM SUs (for metals only)
  - 3 ISM samples from each SU
  - 30 or 49 increments per SU depending on size
  - ISM grid and SUs placement: biased and random

Technical Approach: Areas B (TCRA) & C



Technical Approach: Areas B (TCRA) & C (cont.)

- **ISM sampling process within each SU**
  - Systematic random method for increments
  - Circles: primary locations
  - Triangles: replicate locations
  - Squares: triplicate locations
- **Area C and Background SUs**
  - 7 x 7 (49-increment) grids
  - 100-ft. x 100-ft. SUs
- **Area B (TCRA) SUs**
  - 5 x 6 (30-increment) grids
  - 50-ft. x 50-ft. SU & 30-ft. x 30-ft. SU



Technical Approach: Areas B (TCRA) & C (cont.)

- **Remove vegetation**
  - Chainsaws, hand saws, hand tools, and armored equipment
- **Excavate top 12 inches of soil**
  - Heavy equipment armored with 2 inches of Plexiglas
  - Machine-mounted grade-control global positioning system
- **Screen soil (Powerscreen)**
  - Magnets on conveyor to help separate metals
  - Each with 2-inch and ½-inch screens
  - 100% of screened material will be spread and scanned with hand-held all-metals locators

Technical Approach: Areas B (TCRA) & C (cont.)

- **Conduct DGM**
  - Geophysical system verification
  - Data processing and analysis
  - Discrete anomalies selection
    - Expected response of a 20-mm projectile to depth
    - Targets selection and reacquisition
      - Real-time kinetic digital global positioning system
- **Complete intrusive investigation**
  - Investigate an 18-inch radius to depth
  - Re-verify with DGM
- **Backfill**
  - Screened soil from Adjacent Property
- **Restore site**
  - Mulch from vegetation removal
  - Hydroseed with native seed mix

Technical Approach: Agua Chinon Retarding Basin

- **Trim vegetation**
  - Supports equipment access; root-balls remain intact
- **Conduct 100% DGM survey**
- **Complete intrusive investigation**
- **Backfill and restore site**

Contingent Technical Approach

- Change approach angles with equipment
- Use man-portable DGM to map areas
- Conduct analog mag-and-dig operations
- Complete and document visual inspections
- Complete intrusive investigations for all individual targets to depth

Schedule

- Issue Draft Final Work Plan – early August 2018
- Implement TCRA – late August 2018
- Complete TCRA – late September 2018
- Issue Draft Removal Action Report – November 2018

Summary

- **Historical Investigations and Removals**
  - 2002 MEC Characterization
  - 2008 MEC Characterization
  - 2010 TCRA
- **CSM**
  - Release mechanism: kick-outs that resulted in shallow and sparse MPPEH
  - Validated through previous site actions
- **2018 TCRA: Comprehensive Removal Action**
  - MC Sampling (Areas B [TCRA] and C)
  - Excavation and screening of soil (Areas B [TCRA] and C)
  - DGM (All areas)
  - Intrusive investigation to depth
  - Restoration
- **Goal is to achieve an unrestricted use designation**

Acronyms

BEC	Base Environmental Coordinator
BRAC	Base Realignment and Closure
CSM	conceptual site model
DGM	digital geophysical mapping
EOD	Explosive Ordnance Disposal
FS	Feasibility Study
IRP	Installation Restoration Program
ISM	incremental sampling methodology
MC	munitions constituents
MCAS	Marine Corps Air Station
MDAS	material documented as safe
MEC	munitions and explosives of concern
mm	millimeter
MPPEH	material potentially presenting an explosive hazard
Navy	United States Department of the Navy
NWS	Naval Weapons Station
PE	Professional Engineer
PG	Professional Geologist
Range	EOD Training Range
SU	sampling unit
TCRA	time-critical removal action

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